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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,689	11/18/2003	Timothy C. Krywanczyk	END920030002US1	4803

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EXAMINER

RAO, SHRINIVAS H

ART UNIT PAPER NUMBER

2814

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,689

Applicant(s)

KRYWANCZYK ET AL.

Examiner

Steven H. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-20 and 22-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-9, 11-20 and 22-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for domestic priority under 37 CFR 1.114 from U.S. Serial No. 10/715,689 filed on November 18, 2003 , a RCE has been established and an action on the RCE follows.

Information Disclosure Statement

No further IDS after the one filed on November 12, 2004 has been filed in this case.

Claim Rejections - 35 USC Section 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action'.

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(Paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office Actions as of June 200. Paper copies of foreign patents and non-patent literature will continue to be included with Office Actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, M U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Applicants' are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebsc/index.html> or 1-866-217-9197 for

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information on this policy. Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted).

Claims 1-20 and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated Moon et al. (WO 92/156651 , herein after Moon).

With respect to claims 1 and 11 Moon describes a UV energy curable tape comprising: a support layer, (Moon page 5 line 30-page 6 line 2) an adhesive material positioned on said support layer. (Moon page 5 lines 30 -page 6 line 2) including a UV energy curable oligomer, (Moon Example 1) a UV energy initiator, (Moon page 6 lines 19-28) and a material which starts to emit optical light when said tape is substantially fully cured (Moon page 7 lines 18 to 21, e.g. UV dyes, pigments similar to UV dyes mentioned in Applicants' specification pages 9 line 17 to page 10 line 18) .

It is noted that " and " becomes substantially cured" starts to emit light "is a product by process limitation for which no patentable weight can be given unless recited in proper format.

With respect to claims 2 and 12, Moon describes the UV energy curable tape of claim 1, wherein said adhesive material comprises an acrylate oligomer. (Moon page 5 lines 8-14).

With respect to claims 3 and 13, Moon describes The UV energy curable tape of claim 1, wherein said UV energy curable oligomer comprises a material capable of reacting with radicals to form longer chain polymers. (Moon page 6 line 28 cross linking- inherent property when molecules cross link they form longer chain polymers/copolymer).

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With respect to claims 4 and 14, Moon describes The UV energy curable tape of claim 1 , wherein said UV energy initiator comprises photoinitiator.

1 9 (Moon page 6 line).

With respect to claims 5 and 15 Moon describes the UV energy curable tape of claim 4, wherein said photoinitiator includes diphenyl groups that create radicals when exposed to UV energy. (Moon page 6 lines 19-25).

With respect to claims 6 and 16 Moon describes the UV energy curable tape of claim 1 , wherein said material which emits optical light comprises UV sensitive ink. (Moon page 6 line zo-pigments).

With respect to claims 7 and 17 Moon describes the UV energy curable tape of claim 6, wherein said material which emits optical light comprises from about .001 weight percent to about 20 weight percent of said tape. (Moon claim 6).

With respect to claim 8 and 18 Moon describes the UV energy curable tape of claim 1 , wherein said material which emits optical light comprises UV sensitive dye. (Moon page 7 line 20-21).

With respect to claims 9 and 19 Moon describes the UV energy curable tape of claim wherein substantially fully cured comprises the absorption of about 5 millijoules/cmz to about 10 joules/cmz of UV energy into said tape. (Moon page 4 line 10).

With respect to claim 20 Moon describes the UV energy curable tape of claim 9, wherein said UV energy comprises UV light. (Moon page 1 line 20).

With respect to claims 30 and 31 wherein the light emitting material emits light of second type different from first type, as the tape is being cured and the type of light emitted by said light material changes from said second type to said first type when the type becomes substantially cured and wherein the light matches the amount of energy required to substantially fully cure the tape, thereby to facilitate completely removing the tape from given substrate. (rejected for reasons stated under claims 11 26, 27 etc.).

With respect to claim 32, Moon describes a UV energy curable tape of Claim 1, wherein: the material which starts to emit optical light is a UV sensitive material; (Moon examples , tables) and the light emitting energy range of the light emitting material matches the amount of UV energy required to substantially fully cure the tape. (Moon page 10 last line table I etc.).

With respect to claim 33 Moon describes the UV energy curable tape of Claim 1, wherein said material which emits optical light comprises about 0.001% by weight of the tape; (Moon- see rejection of claim 7 above ,page 6 lines 25-27, photoinitiator is 0.01 part and additive therein is dye/pigment in lesser amounts) said material which emits optical light starts to emit optical light on the first type when said tape absorbs about 10 joules / cm² of UV energy. (Moon , see rejection of claims 9 and 19 above, page 4 line 10).

Response to Arguments

Applicant's arguments filed on June 20, 2005 have been fully considered but they are not persuasive for the following reasons :

Applicants' first contention that they disagree with the Office's position " It is noted that " and " becomes substantially cured" starts to emit light "is a product by

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process limitation for which no patentable weight can be given unless recited in proper format " is not persuasive because

a) The application was restricted between device and method claims and now applicants' by arguing that " these are positive , structural features that describe the elements work and how the invention works " (emphasis supplied) is nothing but an attempt to bring in non-elected method claims by the back door.

b) Under current standards it is not sufficient that positive structural features (for which patentable weight have been given) the recitation/description how the elements of the invention work and how the invention works, i.e. a product-by process claim limited by and defined by the process (how it works / process) the determination of patentability is based on the product itself . The patentability of the product (UV energy curable tape) does not depend upon its method of production (" becomes substantially cured" starts to emit light) . If the product is the same as or obvious form the product of the prior art (Moon page 7 lines 18 to 21, e.g. UV dyes, pigments similar to UV dyes mentioned in Applicants' specification pages 9 line 17 to page 10 line 18), the claim is unpatentable even tough the prior art product was made by a different process, *In re Thrope*, 777 F.2d. 695,698, 227 USPQ964, 966 (Fed. Cir. 1985).

It is further noted that, " The patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for the product-by process claims because of their peculiar nature " than when a product is claimed in the conventional fashion. In re Fessman 489 F. 2d 742,744, 180 USPQ324, 326 (CCPA 1974). Once the Examiner provides the rationale tending to show that the claimed product appears to be

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the same or similar to that of the prior art (same UV pigment dye used by Moon as that stated to be one of the embodiments by Applicants' at least at specification pages 9 line 17 to page 10 line 18) although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product e.g. how is the UV pigment/ dye used to emit light when curing is substantially cured in Applicants' specification Is different from that described in Moon when both of whom use the same product for the same purpose. (emphasis supplied).

c) Applicants' have not recited the claim in proper format. All product by process limitations have to be recited in proper format (see MPEP for guidance and proper format) and despite Office's request Applicants' have not yet recited the product by process limitations in proper format.

Therefore it is proper not to give patentable weight to the product –by process recitation “becomes substantially cured” “starts to emit light”.

Applicants' next contention that Moon does not disclose or suggest “ a UV energy curable tape comprising a material that starts to emit light of a first type when the tape becomes substantially fully cured” is also not persuasive because Applicants' specification describes one of their embodiments as :

“Another example of a material which emits optical light when the tape composition is substantially fully cured is a UV dye.

Examples of a commercially available UV dyes that can be used in this invention are the MSA family of dyes, available from H.W.

Sands Corp. 1080 E. Indiantown Road, Suite, Jupiter, FL, 33477.

If UV sensitive ink or dye are used as the material for this invention,
the light emitting energy range is designed to match the amount of energy
required to substantially fully cure the tape so it can release from the substrate.
Therefore when the tape is substantially fully cured the UV sensitive ink or dye
will emit light. In this invention the ink or dye will change
color to indicate when the tape is substantially fully cured.

The light emission can be sensed optically or by a machine capable of sensing optical light changes. The composition can be defined as substantially fully cured when it has absorbed from about 5 milli joules/cms to about 10 joules/cms of UV energy into the tape. If too little energy is used the tape will not be cured. If too much energy is used the tape can breakdown due to excessive heat. When this occurs there will be residual adhesive left on the bumps after removal of the tape or the chips can crack during picking due to high tack levels. This will be manifest at chip inspection. The UV energy source used in this invention is preferably UV light supplied by a bulb as part of a UV lamp." (applicants' specification page 9 lines 17 to page 10 line 18) .

Therefore Moon's description of UV dyes/pigments used for the same purpose under similar circumstances will produce a UV energy curable tape comprising a material that starts to emit light of a first type when the tape becomes substantially fully

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cured (as what is true for applicants' that UV dyes/pigments are material that starts to emit light of a first type when the tape becomes substantially fully cured, is also true for the applied Moon reference whose UV dyes/pigments are material that starts to emit light of a first type when the tape becomes substantially fully cured).

Applicants' arguments on page 7 last full paragraph quoting Moon page 7 lines 18-21 , is an incomplete restatement of what Moon actually states . Applicants' have convineintly left out dyes pigments .

For the sake of completeness and ready reference _ Moon page 7 lines 18 –21 are reproduced below .

"Other materials which can be blended with the polymerizable monomer mixture include fillers, tackifiers , foaming agents, antioxidants, plasticizers, reinforcing agents, dyes, pigments, fibers, fire retardants , and viscosity adjusting agents." (emphasis supplied) .

The same dyes pigments are also mentioned as "Another example of a material which emits optical light when the tape composition is substantially fully cured is a UV dye." in Applicants' specification.

The dyes/ pigments left out from Applicants' last paragraph on page 7 is similar if not identical to those UV dyes stated in Application specification pages 9-10 and what is true for Applicants' (Another example of a material which emits optical light when the tape composition is substantially fully cured is a UV dye.

Examples of a commercially available UV dyes that can be used in this invention are the MSA family of dyes, available from H.W.

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If UV sensitive ink or dye are used as the material for this invention,
the light emitting energy range is designed to match the amount of energy
required to substantially fully cure the tape so it can release from the substrate.
Therefore when the tape is substantially fully cured the UV sensitive ink or dye
will emit light. In this invention the ink or dye will change color to indicate when
the tape is substantially fully cured.) is also true for the applied Moon reference .

Therefore even assuming arguendo that Applicants' argument that the product by
process limitation that "the material starts to emit light when the tape becomes
substantially fully cured," should be taken into account when determining the
patentability of the claims is correct the Applied prior art of record (Moon) anticipates
the limitation.

It is not understood how Applicants' attorneys can emphatically state "Applicants'
attorneys have carefully reviewed the Office Action and Moon, and it is respedfully
submitted that, in applying Moon. as the Examiner has done, the Examiner is
considering photoinitiators as light emitting materials. Tnere is no disclosure in Moon,
however, that the photoiniéators described therein are light emitting. The photoinitiators
disclosed in Moon react to light to irzitiatie the photopolmerizauon process. There is no
disclosure in Moon that the photoinitiators emit light. In contrast the materials used in
the present invention not only emit light, but also do so in a specific manner - they start
to œnit light when the tape becomes substantially cured. (emphasis supplied) .

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It is noted for the record that the applied Moon reference (at least on page 7 describes several additives to the polymerizable monomer including dyes/ pigments , which are similar materials if not identical to the UV dyes described in Applications specification page 7 that is supposed to emit light to indicate when the tape is substantially fully cured.

Applicants' assumption that the examiner is considering photoinitiator as the light emitting material is a baseless assumption (in view of the above) and need not be addressed further to avoid confusion of the real issues and for the sake of brevity .

Therefore it is clear when claims 1 and 11 are viewed in the most favorable light for the Applicants' the claims are beyond a shadow of doubt anticipated by the applied reference of record, namely Moon.

Dependent claims 2-9 , 12-19, 30-31 and newly added claims 32-33 were alleged to be allowable because of their dependency upon allegedly allowable independent claims 1 and 11 , however as seen above claims 1 and 11 are not allowable therefore claims 2-9, 12-19 , 30-31 and 32-33 i.e. all pending claims are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. Rao whose telephone number is (571) 272-1718. The examiner can normally be reached on 8.00 to 5.00.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven H. Rao

Patent Examiner

August 30, 2005.



LONG PHAM
PRIMARY EXAMINER